

WHAT IS CLAIMED IS:

1. An inductive heating device comprising:  
a power supply including a primary coil;  
an inductive coupling assembly including an inductive coupling sleeve coupled to  
a first end of a cable assembly, the inductive coupling sleeve having a  
secondary coil positioned therein; and  
an inductor core;  
wherein the inductive coupling assembly is configured to removably couple the  
cable assembly to the power supply in inductively coupling the inductor  
core between the primary coil and the secondary coil.
2. The inductive heating device of claim 1, further comprising an inductively heated  
work head interchangeably connected to a second end of the cable assembly.
3. The inductive heating device of claim 1, wherein the inductor core is attached to  
the power supply and extends from the primary coil.
4. The inductive heating device of claim 1, wherein the inductor core is attached to  
the coupling sleeve and extends from the secondary coil.
5. The inductive heating device of claim 1, wherein the inductor core includes a first  
portion and a second portion, the first portion and the second portion configured to be  
separably mateable.
6. The inductive heating device of claim 5, wherein the first portion of the inductor  
core is located at the power supply within the primary coil and the second portion of the  
inductor core is located at the coupling sleeve within the secondary coil.
7. The inductive heating device of claim 5, wherein the first portion of the inductor  
core and the second portion of the inductor core couple to form a toroid.

8. The inductive heating device of claim 5, wherein the first portion of the inductor core and the second portion of the inductor core couple to form a cylinder.
9. The inductive heating device of claim 1, wherein the inductive coupling assembly includes a locking mechanism configured to secure the cable assembly to the power supply.
10. The inductive heating device of claim 9, wherein the locking mechanism is a twist and lock connector.
11. The inductive heating device of claim 9, wherein the locking mechanism includes a first locking member connected to the power supply and a second locking member connected to the inductive coupling sleeve such that coupling the first locking member to the second locking member forms a separable locking connection.
12. The inductive heating device of claim 11, wherein the first locking member is formed as part of a housing of the power supply.
13. A method of inductively heating a target substrate, the method comprising:  
providing a power supply including a primary coil and a first portion of inductor core;  
coupling a sleeve positioned at a first end of a cable assembly to the power supply, where the sleeve includes a secondary coil and a second portion of inductor core, such that the first and second portions of the inductor core inductively couple; and  
activating the power supply to inductively heat a work head attached to a second end of the cable assembly.
14. The method of claim 13, wherein coupling the sleeve to the power supply includes removably locking the first end of the cable assembly to the power supply.

15. The method of claim 14, wherein coupling the sleeve to the power supply includes manipulating a twist and lock connector.

16. The method of claim 15, wherein manipulating the twist and lock connector includes twisting a second locking member connected to the sleeve to engage a first locking member connected to the power supply.

17. The method of claim 13, wherein coupling the sleeve to the power supply includes mating first and second portions of the inductor core to form a toroidal inductor core.

18. The method of claim 13, wherein activating the power supply inductively heats a work head interchangeably attached to the second end of the cable assembly.

19. An inductive heating device comprising:  
a power supply;  
a work head;  
an inductive coupling assembly configured to removably couple the power supply to the work head, the inductive coupling assembly including a primary coil, a secondary coil, and an inductor core; and  
the power supply being electrically coupled to the primary coil, the secondary coil being electrically coupled to the work head, the primary and secondary coils configured to be magnetically coupled through the inductor core when the inductive coupling assembly is coupled.

20. The inductive heating device of claim 19, wherein the inductor core is attached within and extends from the primary coil.

21. The inductive heating device of claim 19, wherein the inductor core is attached within and extends from the secondary coil.

22. The inductive heating device of claim 19, wherein the inductor core includes a first portion and a second portion, the first portion and the second portion configured to be separably mateable.
23. The inductive heating device of claim 22, wherein the first portion of the inductor core is located within the primary coil, and the second portion of the inductor core is located within the secondary coil.
24. The inductive heating device of claim 22, wherein the first portion of the inductor core and the second portion of the inductor core mate to form a toroid.
25. The inductive heating device of claim 19 further including a cable assembly with a first end and a second end, the first end of the cable assembly coupled to the power supply and wherein the inductive coupling assembly is configured to removably couple the cable assembly to the work head.
26. The inductive heating device of claim 19 further including a cable assembly, the inductive coupling assembly configured to removably couple the cable assembly to the power supply.
27. The inductive heating device of claim 19, wherein the inductive coupling assembly includes a locking mechanism.
28. An inductive heating device comprising:  
a power supply including a primary coil;  
a cable assembly having a first end coupled to a secondary coil and a second end coupled to a work head;  
an inductor core; and  
means for removably coupling the cable assembly to the power supply such that the inductor core couples between the primary coil and the secondary coil.